

## FRICTION

1. A skier and her skis have a total mass of 55 kg. It takes a horizontal force of 38 N to start moving on wet snow.
  - a. What is the force of friction?
  - b. What is the normal force?
  - c. What is the coefficient of static friction?
2. A car of *weight* 1500 N has its brakes locked. Determine the force needed to begin to drag the car on dry asphalt, given that the coefficient of static friction is 1.2?
3. An 80 kg skier is using waxed hickory skis on wet snow. Given that the coefficient of kinetic friction is 0.14, determine the force of friction on the skis as the skier glides along a horizontal surface.
4. A force of gravity of 20 N acts on a book at rest on a rough, level table. A horizontal force of 12 N is needed to just start the book moving across the table.
  - a. Determine the coefficient of static friction.
  - b. If a second, identical book is placed on top of the original book at rest, what horizontal force will be required to get the pair to start moving across the table?
5. A 1000 kg crate is dragged across a rough level floor. If 450 N is needed to drag the crate at a constant speed, determine the coefficient of kinetic friction.
6. Do p.103 #1-6.
7. A peach that *weighs* 2.0 N is accelerated by a net force of 8.0 N [E]. If the coefficient of kinetic friction is 1.50, determine:
  - a. The force of friction experienced by the peach.
  - b. The force applied to accelerate the peach.
8. A 3.0 kg object rests on a horizontal surface with a coefficient of static friction of 0.40. A force of 10 N is applied horizontally to the object. Does the object move? Explain.